

REMARKS/ARGUMENTS

Claims 8 – 13 are pending in the application.

A Request for Continued Examination (RCE) is filed concurrently with this Amendment. In addition, a Declaration under 37 C.F.R. § 1.132 by co-inventor Susumu Kiyohara (the “Kiyohara Declaration”) is filed with this Amendment. Applicants respectfully request entry of the Amendment and the Kiyohara Declaration in this application and consideration of claims 8 – 13 for examination.

Independent claims 8, 12, and 13 are now amended to specify that the extract is obtained by extracting “one part by weight of” semi-fermented tea leaves or fermented tea leaves with “2 – 100 parts by weight of a solvent selected from water, ethanol or a mixture thereof according to a dipping method or a method of heating under reflux” [emphasis added]. Support for the amendments is found at paragraphs [0021], [0022], and [0025] at page 10, lines 11, 13 – 15, and 26 – 27; and page 11, lines 1 – 3. No new matter is added.

Applicants acknowledge with appreciation the notice in the pending Office Action withdrawing several previous rejections. The remarks and arguments below are directed specifically to the current grounds for rejection, and the Examiner’s Response to Arguments.

Claims 8 through 13 are rejected under 35 U.S.C. §103(a) over: (1) WO 98/58656 to Bank, et al. (hereinafter, “Bank”) in view of U.S. Patent No. 4,839,187 to Mai, et al.

(hereinafter, “Mai”); as well as (2) Bank, et al., in view of U.S. Patent No. 4,673,530 to Hara (hereinafter, “Hara”).

Independent claims 8, 12, and 13 are amended as noted above.

In further support of the arguments distinguishing over the cited art, Applicants have attached a Declaration under 37 C.F.R. §1.132 by Susumu Kiyohara (the “Kiyohara Declaration”), who is a co-inventor of the present application. The Kiyohara Declaration provides experimental test data comparing anti-oxidant activity of a black tea extract (prepared by Extraction Example 24 in the present application) with rosmarinic acid, which is disclosed in Bank. Specifically, the anti-oxidant activities of the black tea extract and rosmarinic acid, respectively, were tested by the 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenger activity test, and the results charted relative to the activity of L-ascorbic acid, which was a control assigned a value of 100.0 for comparative purposes. As shown by the graphs of Concentration *versus* Absorbance in Figures 1 and 2 of the Kiyohara Declaration, rosmarinic acid exhibited much higher anti-oxidant activity as compared with L-ascorbic acid (136.9 versus 100.0), whereas the black tea extract exhibited much lower anti-oxidant activity as compared with L-ascorbic acid (66.9 versus 100.0). The DPPH radical scavenger activity test data thus shows that rosmarinic acid exerted higher radical scavenging activity than the black tea extract. The Kiyohara Declaration states that, based on the analysis of this experimental test data and review of the Bank reference, “it would not have been obvious for one of ordinary skill in the art to have substituted an extract from tea for the rosemary extract of Bank et al.”

In addition, Bank teaches that an anti-oxidant does not always inhibit the generation of deterioration smell of citral, as in the following passage at page 2, lines 12 – 21:

“Other researchers have investigated the effects of various antioxidants on citral degradation, and specifically the formation of oxidative degradation products (compounds D, E, F, and G). Kimura *et al.* report that none of the free-radical terminators (antioxidants) they tested (i.e., butylated hydroxytoluene (BHT), butylated hydroxyanisole (BHA), propyl gallate, *d,l*- α -tocopherol, nordihydroguaiaretic acid and n-tritriacontane-16,18-dione, isolated from the leaf wax of the Eucalyptus tree) inhibited the formation of these citral oxidative degradation products in an aqueous citral solution. (Kimura, K., *et al.*, *Journal of Agricultural and Food Chemistry*, 31:801-804 (1983); and Kimura, K., *et al.*, *Agricultural and Biological Chemistry*, 47:1661-1663 (1983).) Because these antioxidants failed to prevent formation of oxidative products, Kimura *et al.* concluded that citral degradation can proceed in the absence of oxygen.”

Thus, both the Kiyohara Declaration and the passage in Bank would weigh against the statement in the Response to Arguments (Office Action at page 6) that “one of ordinary skill would have found it obvious to try substitution of one known anti-oxidant for another.” Accordingly, it would not have been obvious to a person of ordinary skill in the art to replace the rosemary extract taught in Bank with the tea extracts recited in claims 8, 12, and 13.

As to Mai, the Response to Arguments (Office Action at page 6) points out that the extraction conditions (to distinguish over Mai) were not recited in the claims. The present amendments to claims 8, 12, and 13 now recite that the extract is obtained “by extracting one part per weight of semi-fermented tea leaves or fermented tea leaves with 2 – 100 parts by weight of a solvent selected from water, ethanol or a mixture thereof according to a dipping method or a method of heating under reflux...” [emphasis added]. Claims 8, 12, and 13 are

distinguished over Mai's disclosures of aqueous extractions conducted at temperatures from 120°C to 210°C (see, e.g., col. 1, lines 44 – 46). In addition, claims 8, 12, and 13 now limit the extraction solvent to “water, ethanol or mixtures thereof,” which provides a reflux temperature outside of the extraction temperatures of 120°C to 210°C taught in Mai.

Moreover, Mai provides the following descriptions of the anti-oxidant activity of extracts of tea leaves (at col. 1, lines 33 – 39 and lines 44 – 47, respectively):

“It is also reported in the literature that certain tea extracts have antioxidant properties, e.g., extracts of tea leaves, tea grounds, tea sweepings and tea wastes, but in all the tea extracts so far described, the antioxidant activity is generally very low and the application of each extract is limited to a restricted class of food materials.”

“We have found surprisingly, that in the aqueous extractions of black tea leaves at temperatures from 120°C to 210°C, certain extracts are formed which contain appreciable quantities of gallic acid. These extracts have an antioxidant activity comparable with or superior to synthetic antioxidant systems...”

Based on these descriptions by Mai, the antioxidant activity of the tea leaves in the present claims would have been expected to be very low, unless extracted at the higher temperatures taught in Mai. This is an additional reason that a person of ordinary skill would not have combined Bank with Mai to have arrived at the present claims.

Hara fails to disclose or suggest an extract as an inhibitor of a deterioration smell that is caused by p-cresol or p-methylacetophenone, as recited in claims 8, 12 or 13. In addition, for the reasons discussed above, it would not have been obvious to combine the rosmar

extracts disclosed in Bank with Hara to arrive at the extracts of tea leaves recited in claims 8, 12, and 13.


Consequently, in view of the data presented in the Kiyohara Declaration, and the remarks provided above, independent claims 8, 12, and 13 would not have been obvious over Bank, taken alone or in combination with Mai or Hara.

Likewise, for at least the same reasons as provided for the independent claims, dependent claims 9 – 11 would not have been obvious over Bank, taken alone or in combination with Mai or Hara.

Therefore, in view of the amendments, Kiyohara Declaration, and arguments provided above, Applicants respectfully submit that claims 8 – 13 are not obvious over Bank, Mai, and/or Hara. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §103(a) rejections thereto, and passage of claims 8 – 13 to allowance.

Respectfully submitted,

3/2/10
Date



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